	B	C
1	**Source Description**	
2		
3	Phase I ID No.	611
4	EPA ID No.	LAD980622104
5	Facility Name	Norco Chemical Plant-West Site Shell Oil Company
6	Facility Location	
7	City	Norco
8	State	LA
9	Unit ID Name/No.	Unit 2
10	Other Sister Facilities	None
11	Number of Sister Facilities	0
12	Combustor Class	Onsite incinerator
13	Combustor Type	Liquid injection
14	Combustor Characteristics	Designed and built by Bieglow-Liptak Corp. Equiped with a mason premix pilot with a Hauck spark ignitor. This burner is also equiped with a natural gas firing system and six liquid waste injection guns NCIN-2 is an induced draft organic choloride incinerator consisting of a combustion chamber, flue gas cooler, and scrubbing train. Induced draft blower is 16000 acfm at 90oF and 20 inc W.C. vacuum. Discharge pressure is 2 inc. W.C. Powered by a 150 hp electric motor
15	Capacity (MMBtu/hr)	
16	Soot Blowing	
17	APCS Detailed Acronym	WHB/QS/AA/CS
18	APCS General Class	WHB, WQ,LEWS
19	APCS Characteristics	Waste heat boiler, water quench, acid absorber, caustic scrubber. The system was designed by Shell Oil Company and manufactured by various suppliers
20	Hazardous Wastes	Liquid wastes and vent gas
21	Haz Waste Description	Allyl Chloride Heavy Ends (ACHE) which is a waste stream produced on site.
22	Supplemental Fuel	Natural gas
23		
24	Stack Characteristics	
25	Diameter (ft)	2.50
26	Height (ft)	100
27	Gas Velocity (ft/sec)	11.4
28	Gas Temperature (°F)	130
29		
30	Permitting Status	Tier I for all metals
31	HWC Burn Status (Date if Terminated)	

	B	C
1	**Condition Description**	
2		
3	**611C10**	
4		
5	Report Name/Date	Source of Emissions Survey of Shell Chemical Company NCIN 2 Stack, February 1998.
6	Report Prepare	Shell Chemical Company
7	Testing Firm	METCO Environmental
8	Testing Dates	February 11-13, 1998
9	Cond Dates	Feb-98
10	Condition Descr	Trial burn, low temp, no water injection, low waste feed
11	Content	PM, HCl/Cl2, CO, DREs
12		
13	**611C11**	
14		
15	Report Name/Date	Source of Emissions Survey of Shell Chemical Company NCIN 2 Stack, February 1998.
16	Report Prepare	Shell Chemical Company
17	Testing Firm	METCO Environmental
18	Testing Dates	February 12, 1998
19	Cond Dates	Feb-98
20	Condition Descr	Trial burn, upper oper temp, max waste, max water injection
21	Content	PM, HCl/Cl2, CO, DREs
22		
23	**611C12**	
24		
25	Report Name/Date	Risk Burn, February 1998
26	Report Prepare	Shell Chemical Company
27	Testing Firm	METCO Environmental
28	Testing Dates	February 17-19, 1998
29	Cond Dates	Feb-98
30	Condition Descr	Risk burn, reasonable upper bound on normal operation
31	Content	PM, HCl/Cl2, CO
32		
33	**611C13**	
34		
35	Report Name/Date	Risk Burn (Partial Retest), March 1998.
36	Report Prepare	Shell Chemical Company
37	Testing Firm	METCO Environmental
38	Testing Dates	March 10-11, 1998
39	Cond Dates	Mar-98
40	Condition Descr	Risk burn, reasonable upper bound on normal operation
41	Content	PM, HCl/Cl2, CO, PCDD/Fs
42		
43	**611C1**	
44		
45	Report Name/Date	Air Emissions Compliance Sampling for Consolidated Air Permit No. 2252, NCIN-2 Incinerator and Biosolids Incinerator, Shell Chemical Co., NORCO West Site, NORCO, LA, July 1994, SwL Project No. 5354-9406-003
46	Report Prepare	Huntingdon/Southwestern Lab, Air Emissions Services Division
47	Testing Firm	Huntingdon/Southwestern Lab, Air Emissions Services Division
48	Cond Descr	Air emissions compliance sampling
49	Testing Dates	July 11, 1994
50	Cond Dates	Jul-94

	B	C	D	E	F	G	H	I	J	K	L	M
1	**Stack Gas Emissions 1**											
2												
3		Comments	Units	7% O2								
4												
5	**611C10**	**Trial Burn**				R1		R2		R3		Cond Avg
6												
7	PM	E1	gr/dscf	y		0.0037		0.0019		0.0016		0.0024
8	CO (RA)	E1	ppmv	y	nd	0.2		6		17.5		7.90
9	HCl		ppmv	n		6.6		6.2		6.6		
10	Cl2		ppmv	n		0.9		0.4		0.4		
11												
12	POHC DRE	Chlorobenzene										
13	POHC Feedrate		lb/hr			19.99		20.01		20		
14	Emission Rate	E2	lb/hr		nd	2.59E-05	nd	1.10E-05	nd	8.04E-06		
15	DRE	E2	%			99.9999		99.9999		99.9999		
16												
17	POHC DRE	1,2,3-Tricholoropropane										
18	POHC Feedrate		lb/hr			25.626		23.47		24.736		
19	Emission Rate	E2	lb/hr		nd	8.98E-06	nd	8.42E-06	nd	1.37E-05		
20	DRE	E2	%			99.9999		99.9999		99.9999		
21												
22												
23	Sampling Train	PM, HCl/Cl2	E1									
24	Stack Gas Flowrate		dscfm			13901		13486		13452		13613
25	O2		%			13.7		13.5		13.1		13.4
26	Moisture		%			9.31		9.01		9.49		9.27
27	Temperature		°F			121		126		128		125
28												
29	Sampling Train	DRE	E2									
30	Stack Gas Flowrate		dscfm			13901		13486		13452		13613
31	O2		%									
32	Moisture		%									
33	Temperature		°F									
34												
35	HCl	E1	ppmv	y		12.7		11.6		11.7		12.0
36	Cl2	E1	ppmv	y		1.7		0.7		0.7		1.1
37	Total Chlorine	E1	ppmv	y		16.11		13.07		13.11		14.1
38												
39	**611C11**	**Trial Burn**				R1		R2		R3		Cond Avg
40												
41	PM	E1	gr/dscf	y		0.0103		0.0085		0.0081		0.0090
42	CO (RA)	E1	ppmv	y		19.9		16.9		17.7		18.2
43	HCl		ppmv	n		4.2		4.2		3.4		
44	Cl2		ppmv	n		0.2		0.1		0.1		
45												
46	POHC	Chlorobenzene										
47	POHC Feedrate		lb/hr			20.01		20		19.99		
48	Emission Rate	E2	lb/hr		nd	5.77E-06	nd	5.74E-06	nd	4.50E-06		
49	DRE	E2	%		nd	99.9999	nd	99.9999	nd	99.9999		
50												
51	POHC	1,2,3-Tricholoropropane										
52	POHC Feedrate		lb/hr			36.702		41.718		38.822		
53	Emission Rate	E2	lb/hr		nd	6.98E-06	nd	7.09E-06	nd	7.02E-06		
54	DRE	E2	%		nd	99.9999	nd	99.9999	nd	99.9999		
55												
56	Sampling Train	PM, HCl/Cl2	E1									
57	Stack Gas Flowrate		dscfm			11163		11031		11057		11084
58	O2		%			7.6		7.5		7.5		7.5
59	Moisture		%			19.67		20.43		20.24		20.11
60	Temperature		°F			140		141		141		141
61												
62	Sampling Train	DRE	E2									
63	Stack Gas Flowrate		dscfm			11163		11031		11057		11083.7
64	O2		%									
65	Moisture		%									
66	Temperature		°F									
67												
68	HCl	E1	ppmv	y		4.4		4.4		3.5		4.09
69	Cl2	E1	ppmv	y		0.2		0.1		0.1		0.14
70	Total Chlorine	E1	ppmv	y		4.81		4.56		3.73		4.37
71												

	B	C	D	E	F	G	H	I	J	K	L	M
72	**611C12**	**Risk Burn**				R1		R2		R3		Cond Avg
73												
74	PM	E1	gr/dscf	y		0.0067		0.0078		0.0046		0.006
75	CO (RA)	E1	ppmv	y		18.3		17.5		7.9		14.57
76	HCl		ppmv	n		2.6		3.4		2.5		
77	Cl2		ppmv	n		0.1		0.1		0.1		
78												
79	Sampling Train	PM, HCl/Cl2	E1									
80	Stack Gas Flowrate		dscfm			11069		11102		11220		11130.33
81	O2		%			8		8		7.7		7.90
82	Moisture		%			19.38		19.68		19.12		19.39
83	Temperature		°F			140		140		140		140.00
84												
85	HCl	E1	ppmv	y		2.8		3.7		2.6		3.03
86	Cl2	E1	ppmv	y		0.1		0.1		0.1		0.11
87	Total Chlorine	E1	ppmv	y		3.02		3.88		2.84		3.24
88												
89	**611C13**	**Risk Burn (Partial Retest)**				R1		R2		R3		Cond Avg
90												
91	CO (RA)	E1	ppmv	y		15.1		11.4		10		12.17
92												
93	Sampling Train	PCDD/PCDF	E1									
94	Stack Gas Flowrate		dscfm			11192		11441		11518		11384
95	O2		%			8.2		8.1		8.1		8.1
96	Moisture		%			20.7		21		21.74		21.1
97	Temperature		°F			141		141		145		142.3

	B	C	D	E	F	G	H	I	J	K	L	M
1	**Stack Gas Emissions 2**											
2												
3												
4	**611C1**					R1		R2		R3		Cond Avg
5												
6	CO (RA)	E1	ppmv	y	nd	0.1	nd	0.1	nd	0.1		0.1
7	HCl	E1	ppmv	y		1.1		1.3		0.3		0.9
8	Cl2	E1	ppmv	y		71.1		74.0		60.1		68.4
9	Total Chlorine	E1	ppmv	y		143.3		149.3		120.4		137.7
10												
11	Sampling Train	Halogens	E1									
12	Stack Gas Flowrate		dscfm			9969.8		10340.3		9891.7		
13	O2		%			9.3		9.7		9.7		
14	Moisture		%			7.6		8.3		8.9		
15	Temperature		°F			124.0		121.0		122.0		
16												
17	Antimony	E1	ug/dscm	y	nd	3.18	nd	3.27	nd	3.29		3.2
18	Arsenic	E1	ug/dscm	y		5.9		3.13		3.15		4.1
19	Barium	E1	ug/dscm	y		54.9		50.1		72.3		59.1
20	Beryllium	E1	ug/dscm	y	nd	1.59	nd	1.63	nd	1.65	100	1.6
21	Cadmium	E1	ug/dscm	y		88.5		110		120		106.2
22	Chromium	E1	ug/dscm	y		15.9		16.3		16.4		16.2
23	Copper	E1	ug/dscm	y		113		56.3		50.4		73.2
24	Lead	E1	ug/dscm	y		221		156		158		178.3
25	Manganese	E1	ug/dscm	y		25.9		25		30.1		27.0
26	Mercury	E1	ug/dscm	y		7.06		14.4		13.1		11.5
27	Nickel	E1	ug/dscm	y		24.4		28.2		23.6		25.4
28	Phosphorus	E1	ug/dscm	y		65.2		75.8		70.4		70.5
29	Selenium	E1	ug/dscm	y		225		67.3		70		120.8
30	Silver	E1	ug/dscm	y		0.9		0.6		0.5		0.7
31	Thallium	E1	ug/dscm	y		3.18		3.27		3.29		3.2
32	Zinc	E1	ug/dscm	y		2790						2790.0
33	SVM	E1	ug/dscm	y		309.5		266		278		284.5
34	LVM	E1	ug/dscm	y		23.39		21.06		21.2		21.9

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1	**Feedstream 1**																		
2																			
3	**611C10**	**Trial burn**			R1		R2		R3		Cond Avg		R1		R2		R3		Cond Avg
4																			
5	Feedstream Number				F1		F1		F1		F1		F2		F2		F2		F3
6	Feed Class				Liq HW		Liq HW		Liq HW		Liq HW		Total		Total		Total		Total
7	Feed Class 2				HW		HW		HW		HW		Total		Total		Total		Total
8	Feedstream Description				Liq waste		Liq waste		Liq waste		Liq waste		Total		Total		Total		Total
9	Feed Rate		lb/hr		4004		3978		4015		4012								
10	Heating Value		Btu/lb		8390		7670		8620		8227.0								
11	Density		kg/L		1.1839		1.1812		1.1836		1.2								
12	Chlorobenzene		lb/hr								20.0								
13	1,2,3-Trichloropropane		lb/hr								24.6								
14	Ash		g/hr	nd	908.107	nd	902.21	nd	919.674		910.0								
15	Chlorine		g/hr		1129322.1		1090050.6		1100114		1106496								
16	Antimony		g/hr	nd	0.2	nd	0.198	nd	0.717		0.37								
17	Arsenic		g/hr		1.017		0.974		0.901		0.96								
18	Barium		g/hr	nd	0.073	nd	0.072	nd	0.074		0.073								
19	Beryllium		g/hr	nd	0.036	nd	0.036	nd	0.037		0.036								
20	Cadmium		g/hr	nd	0.018	nd	0.018	nd	0.018		0.018								
21	Chromium		g/hr		0.254		0.397		0.386		0.346								
22	Lead		g/hr	nd	3.632	nd	0.3789	nd	3.863		3.761								
23	Mercury		g/hr	nd	0.018	nd	0.018	nd	0.018		0.02								
24	Nickel		g/hr	nd	1.235	nd	0.487	nd	0.515		0.75								
25	Selenium		g/hr	nd	0.472	nd	0.595	nd	0.313		0.46								
26	Silver		g/hr	nd	0.291	nd	0.307	nd	0.313		0.304								
27	Thallium		g/hr	nd	0.163	nd	0.162	nd	0.166		0.164								
28																			
29	Stack Gas Flowrate		dscfm		13901		13486		13452		13613								
30	Oxygen		%		13.7		13.5		13.1		13.4								
31																			
32	Thermal Feedrate		MMBtu/hr		33.6		30.5		34.6		33.0								33.0
33	Estimated Firing Rate		MMBtu/hr										32.2		32.1		33.7		32.8
34																			
35	*Feedrate MTEC Calculations*																		
36	Ash		mg/dscm	100	73.8	100	73.5	100	71.4	100	72.5	100	73.8	100	73.5	100	71.4	100	72.9
37	Chlorine		ug/dscm		91757014		88857193		85352076		88180510		91757014		88857193		85352076		88655428
38	Antimony		ug/dscm	100	16	100	16	100	56	100	29	100	16	100	16	100	56	100	29
39	Arsenic		ug/dscm		83		79		70		77		83		79		70		77
40	Barium		ug/dscm	100	6	100	6	100	6	100	6	100	6	100	6	100	6	100	6
41	Beryllium		ug/dscm	100	3	100	3	100	3	100	3	100	3	100	3	100	3	100	3
42	Cadmium		ug/dscm	100	1	100	1	100	1	100	1	100	1	100	1	100	1	100	1
43	Chromium		ug/dscm		21		32		30		28		21		32		30		28
44	Lead		ug/dscm	100	295	100	31	100	300	100	209	100	295	100	31	100	300	100	209
45	Mercury		ug/dscm	100	1	100	1	100	1	100	1	100	1	100	1	100	1	100	1
46	Nickel		ug/dscm	100	100	100	40	100	40	100	60	100	100	100	40	100	40	100	60
47	Selenium		ug/dscm	100	38	100	49	100	24	100	37	100	38	100	49	100	24	100	37
48	Silver		ug/dscm	100	24	100	25	100	24	100	24	100	24	100	25	100	24	100	24
49	Thallium		ug/dscm	100	13	100	13	100	13	100	13	100	13	100	13	100	13	100	13
50	SVM		ug/dscm	100	297	100	32	100	301	100	210	100	297	100	32	100	301	100	210.01
51	LVM		ug/dscm	2.8	106.2	2.6	114.7	2.8	102.7	2.7	107.9	2.8	106.2	3	114.7	2.8	102.7	2.7	107.9
52																			
53																			
54	**611C11**	**Trial burn**			R1		R2		R3		Cond Avg		R1		R2		R3		Cond Avg
55																			
56	Feedstream Number				F1		F1		F1		F1		F2		F2		F2		F3
57	Feed Class				Liq HW		Liq HW		Liq HW		Liq HW		Total		Total		Total		Total
58	Feed Class 2				HW		HW		HW		HW		Total		Total		Total		Total
59	Feedstream Description				Liq waste		Liq waste		Liq waste		Liq waste								
60	Feed Rate		lb/hr		6117		6135		6066		6106.0								

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
61	Heating Value		Btu/lb		8750		7700		9250		8567.0								
62	Density		kg/L		1.18		1.18		1.18		1.18								
63	Ash		g/hr	nd	1387	nd	1391	nd	1376		1385								
64	Chlorine		g/hr		1693104.44		1678050.1		1671008.8		1680721.1								
65	Antimony		g/hr	nd	0.749	nd	0.278	nd	0.303		0.4								
66	Arsenic		g/hr		1.332		1.809		1.541		1.6								
67	Barium		g/hr	nd	0.111	nd	0.39	nd	0.11		0.204								
68	Beryllium		g/hr	nd	0.055	nd	0.056	nd	0.055		0.1								
69	Cadmium		g/hr	nd	0.028	nd	0.028	nd	0.028		0.028								
70	Chromium		g/hr		0.527		0.306		0.605		0.479								
71	Lead		g/hr	nd	5.827	nd	5.844	nd	5.778		5.816								
72	Mercury		g/hr	nd	0.028	nd	0.028	nd	0.055		0.0								
73	Nickel		g/hr		1.193		1.28		0.825		1								
74	Selenium		g/hr	nd	0.472	nd	0.445	nd	0.44		0.452								
75	Silver		g/hr	nd	0.472	nd	0.473	nd	0.468		0.471								
76	Thallium		g/hr	nd	0.25	nd	0.25	nd	0.248		0.249								
77																			
78	Stack Gas Flowrate		dscfm		11163		11031		11057		11084								
79	Oxygen		%		7.6		7.5		7.5		7.5								
80																			
81	Thermal Feedrate		MMBtu/hr		53.5		47.2		56.1		52.3		53.5		47.2		56.1		52.3
82	Estimated Firing Rate		MMBtu/hr										47.5		47.3		47.4		47.4
83																			
84	*Feedrate MTEC Calculations*																		
85	Ash		mg/dscm	100	76.5	100	77.0	100	76.0	100	76.3	100	76.5	100	77.0	100	76.0	100	76.5
86	Chlorine		ug/dscm		93322932		92906611		92299215		92609538		93322932		92906611		92299215		92842920
87	Antimony		ug/dscm	100	41.28	100	15.39	100	16.74	100	24.47	100	41.3	100	15.4	100	16.7	100	24
88	Arsenic		ug/dscm		73.42		100.16		85.12		86.23		73.4		100.2		85.1		86
89	Barium		ug/dscm	100	6.12	100	21.59	100	6.08	100	11.26	100	6.1	100	21.6	100	6.1	100	11
90	Beryllium		ug/dscm	100	3.03	100	3.10	100	3.04	100	3.06	100	3.0	100	3.1	100	3.0	100	3
91	Cadmium		ug/dscm	100	1.54	100	1.55	100	1.55	100	1.55	100	1.5	100	1.6	100	1.5	100	2
92	Chromium		ug/dscm		29.05		16.94		33.42		26.47		29.0		16.9		33.4		26
93	Lead		ug/dscm	100	321.18	100	323.56	100	319.15	100	321.30	100	321.2	100	323.6	100	319.2	100	321
94	Mercury		ug/dscm	100	1.54	100	1.55	100	3.04	100	2.04	100	1.5	100	1.6	100	3.0	100	2
95	Nickel		ug/dscm		65.76		70.87		45.57		60.73		65.8		70.9		45.6		61
96	Selenium		ug/dscm	100	26.02	100	24.64	100	24.30	100	24.99	100	26.0	100	24.6	100	24.3	100	25
97	Silver		ug/dscm	100	26.02	100	26.19	100	25.85	100	26.02	100	26.0	100	26.2	100	25.9	100	26
98	Thallium		ug/dscm	100	13.78	100	13.84	100	13.70	100	13.77	100	13.8	100	13.8	100	13.7	100	14
99	SVM		ug/dscm	100	322.72	100	325.11	100	320.70	100	322.84	100	322.7	100	325.1	100	320.7	100	322.8
100	LVM		ug/dscm	2.9	105.50	2.6	120.20	2.5	121.57	2.6	115.76	2.87	105.5	3	120.2	2.5	121.6	2.6	115.8
101																			
102																			
103	**611C12**	**Risk burn**			R1		R2		R3		Cond Avg		R1		R2		R3		Cond Avg
104																			
105	Feedstream Number				F1		F1		F1		F1		F2		F2		F2		F3
106	Feed Class				Liq HW		Liq HW		Liq HW		Liq HW		Total		Total		Total		Total
107	Feed Class 2				HW		HW		HW		HW		Total		Total		Total		Total
108	Feedstream Description				Liq waste		Liq waste		Liq waste		Liq waste								
109	Feed Rate		lb/hr		5997		6061		6049		6036								
110	Heating Value		Btu/lb		5610		7820		6100		6510								
111	Density		kg/L		1.181		1.189		1.17		1.18								
112	Ash		g/hr	nd	1360.12	nd	1374.635	nd	1371.913		1368.88								
113	Antimony		g/hr	nd	0.272	nd	0.302	nd	1.262		0.612								
114	Arsenic		g/hr		1.306		1.155		1.235		1.232								
115	Barium		g/hr		0.109		0.082		0.082		0.091								
116	Beryllium		g/hr	nd	0.054	nd	0.055	nd	0.055		0.055								
117	Cadmium		g/hr	nd	0.027	nd	0.027	nd	0.027		0.027								
118	Chromium		g/hr		0.544		0.66		0.631		0.612								
119	Lead		g/hr		0.408		0.275		2.222		0.968								
120	Mercury		g/hr	nd	0.027	nd	0.027	nd	0.055		0.036								

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
121	Nickel		g/hr		0.816		1.622		1.509		1.316								
122	Selenium		g/hr	nd	1.17	nd	0.797	nd	0.439		0.802								
123	Silver		g/hr	nd	0.272	nd	0.275	nd	0.274		0.274								
124	Thallium		g/hr	nd	0.245	nd	0.247	nd	0.247		0.246								
125	Copper		g/hr		2.72		1.65		1.646		2.005								
126	Manganese		g/hr		0.789		0.852		0.741		0.794								
127	Zinc		g/hr		5.985		21.994		12.622		13.534								
128																			
129	Stack Gas Flowrate		dscfm		11069		11102		11220		11130.00								
130	Oxygen		%		8		8		7.7		7.90								
131																			
132	Thermal Feedrate		MMBtu/hr		33.6		47.4		36.9		39.3		33.6		47.4		36.9		39.3
133	Estimated Firing Rate		MMBtu/hr										45.7		45.8		47.4		46.3
134																			
135	*Feedrate MTEC Calculations*																		
136	Ash		mg/dscm	100	77.9	100	78.5	100	75.8	100	77.42	100	77.9	100	78.5	100	75.8	100	77.4
137	Antimony		ug/dscm		15.59		17.25		69.73		34.19		15.6		17.3		69.7		34
138	Arsenic		ug/dscm		74.83		65.98		68.24		69.68		74.8		66.0		68.2		70
139	Barium		ug/dscm		6.25		4.68		4.53		5.15		6.2		4.7		4.5		5
140	Beryllium		ug/dscm	100	3.09	100	3.14	100	3.04	100	3.09	100	3.1	100	3.1	100	3.0	100	3
141	Cadmium		ug/dscm	100	1.55	100	1.54	100	1.49	100	1.53	100	1.5	100	1.5	100	1.5	100	2
142	Chromium		ug/dscm		31.17		37.70		34.86		34.58		31.2		37.7		34.9		35
143	Lead		ug/dscm		23.38		15.71		122.77		53.95		23.4		15.7		122.8		54
144	Mercury		ug/dscm	100	1.55	100	1.54	100	3.04	100	2.04	100	1.5	100	1.5	100	3.0	100	2
145	Nickel		ug/dscm		46.76		92.66		83.37		74.26		46.8		92.7		83.4		74
146	Selenium		ug/dscm	100	67.04	100	45.53	100	24.26	100	45.61	100	67.0	100	45.5	100	24.3	100	46
147	Silver		ug/dscm	100	15.59	100	15.71	100	15.14	100	15.48	100	15.6	100	15.7	100	15.1	100	15
148	Thallium		ug/dscm	100	14.04	100	14.11	100	13.65	100	13.93	100	14.0	100	14.1	100	13.6	100	14
149	Copper		ug/dscm		155.85		94.26		90.94		113.69		155.9		94.3		90.9		114
150	Manganese		ug/dscm		45.21		48.67		40.94		44.94		45.2		48.7		40.9		45
151	Zinc		ug/dscm		342.93		1256.46		697.39		765.59		342.9		1256.5		697.4		766
152	SVM		ug/dscm	6.2	24.9	8.9	17.3	1.2	124.3	2.8	55.48	6.21	24.9	9	17.3	1.2	124.3	2.8	55.5
153	LVM		ug/dscm	2.8	109.1	2.9	106.8	2.9	106.1	2.9	107.35	2.84	109.1	3	106.8	2.9	106.1	2.9	107.4
154																			
155	**611C13**	**Risk burn (Partial R**			R1		R2		R3		Cond Avg		R1		R2		R3		Cond Avg
156																			
157	Feedstream Number				F1		F1		F1		F1		F2		F2		F2		F3
158	Feed Class				Liq HW		Liq HW		Liq HW		Liq HW		Total		Total		Total		Total
159	Feed Class 2				HW		HW		HW		HW		Total		Total		Total		Total
160	Feedstream Description				Liq waste		Liq waste		Liq waste		Liq waste								
161	Feed Rate		lb/hr		6124		6165		6076		6036								
162	Heating Value		Btu/lb		7510		8010		7470		7663								
163	Density		kg/L		1.1746		1.1772		1.1853		1.179								
164	Ash		g/hr	nd	1388.923	nd	1398.222	nd	1378.037		1388.394								
165	Antimony		g/hr		0.917		1.314		0.744		0.992								
166	Arsenic		g/hr		2.278		1.902		1.185		1.788								
167	Barium		g/hr		0.194		0.196		3.307		1.232								
168	Beryllium		g/hr	nd	0.056	nd	0.056	nd	0.055		0.056								
169	Cadmium		g/hr	nd	0.028	nd	0.028	nd	0.028		0.028								
170	Chromium		g/hr		0.667		0.643		0.661		0.657								
171	Lead		g/hr	nd	5.556	nd	5.873	nd	5.512		5.647								
172	Mercury		g/hr	nd	0.056	nd	0.028	nd	0.055		0.046								
173	Nickel		g/hr		3.333		2.796		1.791		2.64								
174	Selenium		g/hr	nd	0.472	nd	1.147	nd	0.469		0.696								
175	Silver		g/hr	nd	0.444	nd	0.475	nd	0.441		0.453								
176	Thallium		g/hr	nd	0.25	nd	0.252	nd	0.248		0.25								
177																			
178	Stack Gas Flowrate		dscfm		11192		11441		11518		11383.7								
179	Oxygen		%		8.2		8.1		8.1		8.1								
180																			

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
181	Thermal Feedrate		MMBtu/hr		45.99		49.38		45.39		46.25		46.0		49.4		45.4		46.9
182	Estimated Firing Rate		MMBtu/hr										45.5		46.9		47.2		46.5
183																			
184	*Feedrate MTEC Calculations*																		
185	Ash		mg/dscm	100	79.9	100	78.1	100	76.5	100	78.17	100	77.58	100	77.41	100	77.72	100	77.6
186	Antimony		ug/dscm		52.78		73.41		41.29		55.82		56.84		51.32		54.66		54
187	Arsenic		ug/dscm		131.11		106.25		65.76		101.04		91.02		85.94		92.66		90
188	Barium		ug/dscm		11.17		10.95		183.51		68.54		87.67		113.24		89.82		97
189	Beryllium		ug/dscm	100	3.22	100	3.13	100	3.05	100	3.13	100	3.10	100	3.10	100	3.11	100	3
190	Cadmium		ug/dscm	100	1.61	100	1.56	100	1.55	100	1.58	100	1.56	100	1.57	100	1.57	100	2
191	Chromium		ug/dscm		38.39		35.92		36.68		37.00		36.53		36.74		36.75		37
192	Lead		ug/dscm	100	319.77	100	328.09	100	305.87	100	317.91	100	317.29	100	313.69	100	316.30	100	316
193	Mercury		ug/dscm	100	3.22	100	1.56	100	3.05	100	2.61	100	2.41	100	2.69	100	2.57	100	3
194	Nickel		ug/dscm		191.83		156.20		99.38		149.14		134.91		127.81		137.28		133
195	Selenium		ug/dscm	100	27.17	100	64.08	100	26.03	100	39.09	100	43.06	100	36.06	100	39.40	100	40
196	Silver		ug/dscm	100	25.55	100	26.54	100	24.47	100	25.52	100	25.51	100	25.17	100	25.40	100	25
197	Thallium		ug/dscm	100	14.39	100	14.08	100	13.76	100	14.08	100	13.97	100	13.94	100	13.99	100	14
198	SVM		ug/dscm	100	321.4	100	329.7	100	307.4	100	319.49	100	318.85	100	315.25	100	317.86	100	317.3
199	LVM		ug/dscm	1.9	172.7	2.2	145.3	2.9	105.5	2.2	141.17	1.87	130.65	2	125.77	2.9	132.53	2.2	129.7

	B	C	D
1	**Feedstream 2**		
2			
3	**611C1**		
4			
5	No feedrate information available		

	B	C	D	E
1	**Process Information**			
2				
3	**611C10 Trial burn**			Cond Avg
4				
5	Combustion Chamber Temp (min)	^{o}F		1667
6	Combustion Pressure	in. WC	nd	-1
7	Waste Injection Pressure	psig		5.0
8	Atomizing Steam Header	psig		58.00
9	Scrubber pH	pH		7.53
10	Scrubber Recir Rate	gpm		419
11	Water Injection Rate	gpm		0
12				
13	**611C11 Trial burn**			Cond Avg
14				
15	Combustion Chamber Temp (min)	^{o}F		2009.0
16	Combustion Pressure	in. WC		-1.00
17	Waste Injection Pressure	psig		5
18	Atomizing Steam Header	psig		57
19	Scrubber pH	pH		7.9
20	Scrubber Recir Rate	gpm		412
21	Water Injection Rate	gpm		10
22				
23	**611C12 Risk burn**			Cond Avg
24				
25	Combustion Chamber Temp (min)	^{o}F		2006.0
26	Combustion Pressure	in. WC		-1.00
27	Scrubber pH	pH		7.9
28	Scrubber Recir Rate	gpm		420
29	Water Injection Rate	gpm		8.01
30				
31	**611C13 Risk burn**			Cond Avg
32				
33	Combustion Chamber Temp (min)	^{o}F		2004.0
34	Combustion Pressure	in. WC		-1.00
35	Scrubber pH	pH		7.9
36	Scrubber Recir Rate	gpm		417
37	Water Injection Rate	gpm		8.01

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	**PCDD/PCDF**																	
2	N																	
3	Facility Name and ID:		Norco Chemical Plant-West Site Shell Oil Company															
4	Condition ID:		611C13															
5	Condition/Test Date:		Risk burn, reasonable upper bound on normal operation															
6																		
7			I-TEF			Run 1						Run 2					Run 3	
8			Wght Fact		Total	TEQ	Total	TEQ		Total	TEQ	Total	TEQ		Total	TEQ	Total	TEQ
9					Full ND	Full ND	1/2 ND	1/2 ND		Full ND	Full ND	1/2 ND	1/2 ND		Full ND	Full ND	1/2 ND	1/2 ND
10	Detected in sample volume (ng)																	
11		2,3,7,8-TCDD	1	nd	0.050	0.050	0.025	0.025	nd	0.030	0.030	0.015	0.015	nd	0.040	0.040	0.020	0.020
12		1,2,3,7,8-PCDD	0.5	nd	0.490	0.245	0.245	0.123	nd	0.260	0.130	0.130	0.065	nd	0.270	0.135	0.135	0.068
13		1,2,3,4,7,8-HxCDD	0.1		2.010	0.201	2.010	0.201	nd	0.920	0.092	0.460	0.046		1.210	0.121	1.210	0.121
14		1,2,3,6,7,8-HxCDD	0.1		2.010	0.201	2.010	0.201	nd	0.960	0.096	0.480	0.048		1.210	0.121	1.210	0.121
15		1,2,3,7,8,9-HxCDD	0.1	nd	2.810	0.281	1.405	0.141	nd	1.200	0.120	0.600	0.060		1.710	0.171	1.710	0.171
16		1,2,3,4,6,7,8-HpCDD	0.01		41.960	0.420	41.960	0.420		16.440	0.164	16.440	0.164		25.060	0.251	25.060	0.251
17		OCDD	0.001		134.180	0.134	134.180	0.134		45.210	0.045	45.210	0.045		78.520	0.079	78.520	0.079
18		2,3,7,8-TCDF	0.1	nd	0.550	0.055	0.275	0.028	nd	0.270	0.027	0.135	0.014	nd	0.240	0.024	0.120	0.012
19		1,2,3,7,8-PCDF	0.05		6.520	0.326	6.520	0.326		3.010	0.151	3.010	0.151		3.820	0.191	3.820	0.191
20		2,3,4,7,8-PCDF	0.5		7.320	3.660	7.320	3.660		4.110	2.055	4.110	2.055	nd	4.410	2.205	2.205	1.103
21		1,2,3,4,7,8-HxCDF	0.1		131.200	13.120	131.200	13.120		66.730	6.673	66.730	6.673		87.190	8.719	87.190	8.719
22		1,2,3,6,7,8-HxCDF	0.1		106.100	10.610	106.100	10.610		46.470	4.647	46.470	4.647		58.610	5.861	58.610	5.861
23		2,3,4,6,7,8-HxCDF	0.1		73.400	7.340	73.400	7.340		36.870	3.687	36.870	3.687		44.210	4.421	44.210	4.421
24		1,2,3,7,8,9-HxCDF	0.1		6.620	0.662	6.620	0.662		2.710	0.271	2.710	0.271		4.020	0.402	4.020	0.402
25		1,2,3,4,6,7,8-HpCDF	0.01		1371.700	13.717	1371.700	13.717		590.100	5.901	590.100	5.901		828.800	8.288	828.800	8.288
26		1,2,3,4,7,8,9-HpCDF	0.01		393.550	3.936	393.550	3.936		161.440	1.614	161.440	1.614		273.800	2.738	273.800	2.738
27		OCDF	0.001		3564.400	3.564	3564.400	3.564		1433.000	1.433	1433.000	1.433		2295.900	2.296	2295.900	2.296
28		Total TCDD	0	nd	0.400	0.000	0.200	0.000	nd	0.070	0.000	0.035	0.000	nd	0.080	0.000	0.040	0.000
29		Total PCDD	0	nd	2.200	0.000	1.100	0.000	nd	0.770	0.000	0.385	0.000	nd	1.300	0.000	0.650	0.000
30		Total HxCDD	0		17.740	0.000	17.740	0.000	nd	8.200	0.000	4.100	0.000		10.730	0.000	10.730	0.000
31		Total HpCDD	0		76.490	0.000	76.490	0.000		30.760	0.000	30.760	0.000		46.100	0.000	46.100	0.000
32		Total TCDF	0		9.200	0.000	9.200	0.000	nd	5.300	0.000	2.650	0.000		5.700	0.000	5.700	0.000
33		Total PCDF	0		107.130	0.000	107.130	0.000		60.960	0.000	60.960	0.000		64.290	0.000	64.290	0.000
34		Total HxCDF	0		795.910	0.000	795.910	0.000		404.610	0.000	404.610	0.000		490.950	0.000	490.950	0.000
35		Total HpCDF	0		2613.200	0.000	2613.200	0.000		1122.300	0.000	1122.300	0.000		1703.800	0.000	1703.800	0.000
36																		
37		Gas sample volume (dscf)				161.54	161.54	161.54			140.88	140.88	140.88			145.15	145.15	145.15
38		O2 (%)				8.20	8.20	8.20			8.1	8.1	8.1			8.10	8.10	8.10
39																		
40		PCDD/PCDF (ng in sample)				58.52	7319.6	58.21			27.137	3104.0	26.889			36.06	4696.7	34.86
41		PCDD/PCDF (ng/dscm @ 7% O2		1.1		14.00	1751.24	13.93	1.8		7.39	844.95	7.32	6.7		9.53	1240.89	9.21
42																		
43		TEQ Cond Avg	10.2															
44		Total Cond Avg	1279.0															